

and planting out the tubes, it is hoped that greater success will be attained, as no damage can be done in this manner to the delicate fibrils of the roots, on the preservation of which the success of the operation mainly depends.

154. Mr. Haselden was the first to start planting by means of bamboo-tubes, and this may account for the superior results said to have been attained in his Division with teak-plants put down in the Yellápur-range in 1892, 4,289 out of a total of 4,418 having survived up to present time.

155. As regards reproduction, generally, experience seems to show that complete closure and the exclusion of fire are the most effective means of regenerating the forests of the Southern Circle. Artificial regeneration cannot be expected to effect much on extensive areas, although it may be usefully employed as a means of establishing a suitable proportion of superior species and of filling up blanks in the covert. The want of a sufficiently-numerous and skilled departmental staff is a great hindrance to successful regeneration.

(3). *Early Thinnings.*

156. In the Northern Division of Kánara, thinnings were made in the teak-plantations of the Kárwár-range, and 4,973 poles were extracted at a cost of Rs. 327. They fetched Rs. 1,371.

(4). *Experiments.*

157. In the Southern Division of Kánara, the Divisional Officer reports that seeds of the *Pithecolobium saman* were sown in bamboo-tubes at every náka of the Honávar-range, and that all the seeds have germinated. The trees of this species reared in Kánara, especially in Sirsi and Yellápur, are in a flourishing condition.

(e). **EXTRACTION AND TRANSPORT OF MAJOR FOREST-PRODUCE  
BY LAND AND WATER.**

158. The principal produce which is transported by water is that taken down to the Kodibág-depôt near Kárwár from the forests in the immediate neighbourhood of the Kálánadi and its tributary the Káni. About 81,750 cubic-feet of large teak-timber are extracted in this manner every year. The timber is dragged down to the slopes overhanging the rivers by elephants, slipped into the water, and rafted down to Kodibág.

159. Rivers are also utilized for the transport of small timber and fire-wood in Kolába, Ratnágiri and Kánara.

160. Produce from other forests is conveyed to depôt in carts, drawn by buffaloes or bullocks.

161. The Southern Mahratta Railway is also utilized to a considerable extent for the local distribution and export of produce.

(f). **EXPLOITATION OF MINOR FOREST-PRODUCE.**

(1). *Extraction of Fodder.*

162. The extraction of fodder is quite an insignificant feature in the working of the forests of the Southern Circle. Villagers are generally allowed to remove grass from the open portions of forests in their own villages free of charge. Small patches of valuable grass-lands in Belgaum, Bijápur, Kolába and Ratnágiri are sold by auction, the purchasers making their own arrangements for the cutting and removal of the grass. In the same way, grass is sometimes sold from plantations and closed numbers in Dhárwár. The total amount received annually on account of fodder sold in the above-mentioned manner is only about Rs. 8,174

(2). *Grazing.*

163. Grazing is allowed to cattle in the Government forests under the regulations referred to in paragraph 114 of this report.

164. After protection from fire, the regulation of the grazing generally, but more especially in the timber-forests of Kánara, is the most important factor in the maintenance of the forests. Those forests can be treated only by the method of jardinage, which makes satisfactory regulation of the grazing difficult. At present, cattle are allowed to graze almost everywhere in Kánara, but a salient feature of the organization now in progress will be their confinement to sufficient, but limited, areas, and the exclusion from the most important teak-forests of outsiders' cattle, which come from the more open country in the rainy season.

165. In Dhárwár and Bijápur, the gradual closure of about 25 per cent. of the area of the forests was in progress when it was stopped on receipt of

Government Resolutions Nos. 8227 of 1st December, 1891, and 108 of 7th January, 1892. Since then, no progress has been made in this most important direction, but the areas previously closed have remained closed. No improvement can take place in the condition of the vegetation that sparsely covers the rocky hills of Bijápur, and parts of Belgaum and Dhárwár, without a system of periodical closure, to man and beast, strictly enforced.

166. During the financial year, 1892-93, the revenue aggregated Rs. 107,944 against Rs. 91,487 in 1891-92. The slight increase is ascribable to the introduction of the new fee-system ordered in Government Resolution No. 3595 of 23rd May, 1890.

(3). *Miscellaneous Produce.*

167. The principal article of minor produce in Kánara and Belgaum is *harda* (fruit of the *Terminalia chebula*). During the year under report, the *harda* collection was very poor owing to heavy rain in October and November, which spoilt the quality of the crop. The rates obtained were also lower than those in 1891-92. The collection of the two years was :—

		1891-92. Khandis.	1892-93. Khandis.
Northern Division of Kánara	...	1,536	701
Central Division of Kánara	...	425	149
Southern Division of Kánara	...	1,564	1,505
Belgaum Division	...	5,148	2,891
		<hr/> 8,673	<hr/> 5,246
Rs.	...	<hr/> 1,35,729	<hr/> 97,058

168. The other important articles exploited in the Circle are *shigekdi* (pods of *Acacia concinna*), wax, gum, wild pepper and spices, catechu and tárwád-bark (*Cassia auriculata*).

169. The receipts from minor products amounted to Rs. 1,30,292 during the period under report, against Rs. 1,65,012 in 1891-92.

170. The average amount realized during the last 3 years by the sale of each one of the more important minor products is given below and will give a good idea of the importance of each :—

	Rs.
Harda	1,22,721
Spices and pepper	2,935
Catechu	4,562
Honey and wax	4,095
Tárwád-bark	2,088
Shigekái	5,103

171. In December last, Government issued orders laying down certain principles on which minor products should be exploited, and the Collector and Divisional Officer now decide, each year, which species of minor produce shall be sold during the ensuing year, and which kind shall be left for the free consumption of the public.

172. *Hardas* are sold departmentally, but the right to collect other reserved minor produce is generally sold by auction. It is not the best mode of disposing of some kinds of produce (*e.g.*, pepper), but in the present weak state of establishments, it is necessary to avoid departmental operations as much as possible.

## CHAPTER III.

### GROSS YIELD AND OUTTURN OF FOREST-PRODUCE.

173. The yield for the period under report was as follows :—

*Northern, Central and Southern Divisions of Kánara.*

174. The large teak exploited, yielded 305,500 cubic-feet against 354,459 cubic-feet in 1891-92; and small teak, such as poles, rafters, &c., aggregated 50,940 cubic-feet against 81,360 cubic-feet.

175. The quantity of large junglewood removed, rose, from 265,756 cubic-feet in 1891-92, to 296,440 cubic-feet in 1892-93, and that of small junglewood, from 5,968 cubic-feet, to 29,844 cubic-feet. The quantity of large blackwood, exploited, also rose, from 24,546 cubic-feet, to 55,551 cubic feet, and that of small blackwood from 137 to 220 cubic-feet.